

**COMPARATIVE STUDY OF DEXMEDETOMIDINE AND FENTANYL
AS ADJUVANT TO EPIDURAL ROPIVACAINE FOR
LOWER LIMB ORTHOPEDIC SURGERIES**

Aim : To evaluate and compare the efficacy, analgesic effects, postoperative analgesia of epidurally administered dexmedetomidine or fentanyl along with ropivacaine for patients undergoing lower limb orthopedic surgeries .

Study design: A Prospective randomized double-blinded study

Methods: The study was conducted at Chengalpattu Medical College after obtaining ethical committee approval, 60 patients of both gender aged 18-60 years, American Society of Anaesthesiologist (ASA) physical status I and II who undergoing elective lower limb orthopaedic surgeries were selected and randomly allotted into two groups . Inj. Ropivacaine, 15 ml of 0.5%, was administered epidurally in both the groups with addition of 1 µg/kg of dexmedetomidine in group A and 1 µg/kg of fentanyl in group B. Time of onset of sensory block at T10, maximum sensory level achieved ,time taken for complete motor blockade, sedation score, total duration of analgesia, time of first rescue analgesia ,haemodynamic parameters, side effects were observed. At the end of study, data was analyzed statistically using Two sided Independent Student t test and Mann-Whitney U test for parametric data. Chi-square test for non parametric data. Value of $P < 0.05$ is considered statistically significant . Results: The demographic profile of patients was comparable in both the groups. Onset of sensory analgesia at T10 3.87 ± 0.681 Vs 6.03 ± 1.47 (mins) $p = 0.0001$ and attainment of complete motor blockade 19 ± 3.151 Vs 23.37 ± 2.58 (mins) $p = 0.0001$ was significantly earlier in the group A.

Total duration of analgesia was prolonged significantly in the group A 335.83 ± 41.316 Vs 285.37 ± 25.914 (mins) $p = 0.0001$. Sedation scores were much better in the group A and showed significant on statistical comparison ($p < 0.05$). Incidence of nausea and vomiting was higher in the group B, while incidence of dry mouth was higher in the group A. Side effects such as bradycardia and hypotension were more in group A. But easily managed with injection atropine and ephedrine. None of the patients had respiratory depression in both groups.

Conclusions: To conclude, dexmedetomidine seems to be a better adjuvant to epidural ropivacaine for lower limb orthopedic surgeries for attaining early onset of sensory and motor block, providing better sedation and prolonging sensory blockade when compared to epidural fentanyl with minimal side effects.

Key words: Ropivacaine, Dexmedetomidine, Fentanyl, lower limb orthopedic surgeries, Epidural anaesthesia.